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RAL, M.E.		
LINGAME, A.H.		
BY, W.S.		
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NIVAL, G.J.		
IS, J.G.		
RERA, D.W.		
Y, R.E.	X	
S, J.A.		
VER, W.S.		
AN, P.M.		
NI, B.J.		
MAN, L.K.		
LY, T.J.		
DAHL, T.		
BIG, J.G.		
CHINS, N.M.		
KSON, D.T.		
L, R.E.		
ESTER, A.W.		
RX, G.E.		
DONALD, M.M.		
ENNA, F.G.		
NTROSE, J.K.		
RGAN, R.V.		
TER, G.L.		
ZUTO, V.M.		
ING, T.L.		
NDLIN, N.B.		
HWARTZ, J.K.		
LOCK, G.H.		
EWART, D.L.		
GER, S.G.	X	
BIN, P.M.		
ORHEIS, G.M.		
SON, J.M.		
Quinn, R	X	
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ASSIFICATION:

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REPLY TO RFP CC NO:

TION ITEM STATUS
ARTIAL/OPEN
☐ CLOSED
APPROVALS:

G & TYPIST INITIALS

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EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC.
ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

June 9, 1995 95-RF-04975

B. C. Wu
Manager Operable Unit 4
Environmental Restoration Division
DOE/RFFO

RESPONSES TO MODULAR STORAGE TANK OVERFILL CONDITIONS - SRK-083-95

Action: Relay this information to the Colorado Department of Public Health and Environment (CDPHE)

Operation of the Interceptor Trench System (ITS) and Modular Storage Tanks (MST's) during unusual precipitation events or other upset conditions, certain response levels may need to be invoked. Four separate levels of response are addressed and explained here. These levels are based on the amount of water present and the rate of arrival from the Interceptor Trench System.

NORMAL OPERATION

Normal operation of these tanks involves pumping water from the ITS sump to the tanks and subsequently pumping the water to the processing facility. The pump rate from the sump into the MST's is a maximum of 115 gallons per minute (GPM) (approximately 85 GPM from one pump and 115 GPM from 2 pumps in parallel) and the pump rate out is approximately 25 GPM. The Interim Measure/Interim Remedial Action (IM/IRA) states that one of the three MST's will remain operationally empty as an emergency tank to be used in the event that one of the "in service" tanks starts to leak and that a 2 ft. freeboard (96 inch fill level) will be maintained in each tank to prevent a spill caused by overtopping due to wind or seismic events. Manufacturer recommendation is that a minimum of 18 inches of water be maintained in each tank to serve as ballast to hold down the liner, therefore operationally empty is approximately 18" of water.

RESPONSE LEVEL I

The first condition, which has nothing to do with tank capacity, is when water rate into the ITS sump exceeds the sump pumps capacity. The sump fills from several laterals that enter the sump about 10 feet below ground level. During and shortly after major precipitation events, this inflow may exceed the 115 GPM capacity of the two pumps. When this occurs, the sump continues to fill until it overflows into North Walnut Creek. No attempt is made to contain or control this overflow, it is not treated as a spill and is not reported beyond being recorded in the operations log book.

RESPONSE LEVEL II

The second condition occurs when the rate into the MST's exceeds the pump out rate for a sufficient period of time that both "in service" tanks are filled to the 86" high level alarm interlock. Deprogramming of this interlock is required to fill to the 96" level. At this point (96"), the third (emergency) tank will be placed in service to receive the additional water rather than allow the sump to overflow. This would disable the ability to completely empty a leaking tank in 24

hours. The standard operating conditions need to be restored as soon as possible. 6CCR1007-3 Para. 264.196 (b) requires the owner/operator to remove as much of the waste from a leaking tank as is necessary to stop the leak and allow inspection within 24 hours. The less empty volume available, the greater the risk that leak response will be inadequate.

RESPONSE LEVEL III

The third condition results when all three tanks are filled due to the inability to pump water out as fast as it is going in. At this point the freeboard level will be reduced to 12" from 24". This somewhat increases the chance of overtopping the tank during a strong wind, however it provides about 220,000 gallons of additional capacity.

RESPONSE LEVEL IV

The fourth and last condition occurs when all three tanks are in service, the freeboard has been decreased to 12" and the tanks are once again full. Under this condition, all options have already been exercised and when the tank is full the sump pumps will be turned off and the sump would overflow. When one tank is pumped down 6", then the sump pumps will be reactivated.

The four response levels described above are recommended responses to operating conditions resulting from extremely high precipitation events. Exercising of any of these responses would be reported to the appropriate RFFO representative with a recommendation that the CDPHE be notified. Restoration to normal operating parameters will be done as soon as possible and RFFO will be notified as soon as normal operations are restored. Currently, as documented in a regulator contact record, the MST's are being operated at response level II.

S. R. Keith
Program Manager
Solar Pond Projects
EG&G Rocky Flats, Inc.

RWB:jlb

Orig. and 1 cc - B. C. Wu

cc:
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S. Surovchak - DOE/PMD